

Appl. No. 09/920,782  
Amdt. Dated 05/23/2005  
Reply to Office Action of 02/22/2005

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (Currently Amended) A method for automatic gain control, comprising:  
taking a plurality of samples of received signal in a feedback path for controlling an automatic gain control component;  
calculating power for ~~each of~~ said plurality of samples of the received signal;  
computing an average value of said calculated powers for said plurality of samples; and  
generating an appropriate feedback signal based on said computed average value.
2. (Original) The method of claim 1, wherein said computing an average value includes selectively eliminating any sample above a pre-specified threshold value.
3. (Original) The method of claim 2, wherein said pre-specified threshold value includes a value that is three times a standard deviation of samples of the received signal.
4. (Original) The method of claim 1, wherein said taking a plurality of samples of received signal includes:  
receiving an in-phase component and a quadrature-phase component of the received signal; and  
sampling the in-phase component and the quadrature-phase component of the received signal.
5. (Original) The method of claim 4, wherein calculating the power for each of said plurality of samples includes:  
first calculating a square of the sampled in-phase component;  
second calculating a square of the sampled quadrature-phase component; and  
third calculating a sum of the square of the sampled in-phase component and the square of the sampled quadrature-phase component.

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6. (Original) The method of claim 1, wherein said generating includes differencing said average value and a pre-specified setpoint.

7. (Original) The method of claim 6, further comprising:  
controlling the loop gain of a feedback signal.

8. (Currently Amended) Implemented in a feedback path of a telecommunications device for automatic gain control, an ~~An~~ automatic gain control system, comprising:

a sampling element to take multiple samples of received signal being returned via the feedback path;

a power calculator arranged to compute power of each of said multiple samples;

an averaging element arranged to produce an output that reduces the impact of samples with power level substantially higher than an average power in generation of a feedback gain control signal; and

a feedback signal generator to generate the feedback gain control signal based on said output of said averaging element.

9. (Original) The system of claim 8, wherein said output of said averaging element is an average value of said multiple samples.

10. (Original) The system of claim 8, wherein said output of said averaging element is a value that is an average of said multiple samples after selectively eliminating samples that are greater than three time the standard deviation of samples in the received signal.

11. (Original) The system of claim 8, wherein said feedback signal generator includes an adder to determine the difference between the output of said averaging element and a pre-specified setpoint.

12. (Original) The system of claim 11, further comprising an amplifier to control a loop gain.

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13. (Original) The system of claim 12, further comprising an accumulator to generate the feedback gain control signal.

14. (Currently Amended) A system, comprising:

a demodulator;

an automatic gain control component; and

an automatic gain control system situated in a feedback path and coupled to both said demodulator and said automatic gain control component, the automatic gain control system to provide functions which enable the system to:

take a plurality of samples of received signal,

calculate power for each of said plurality of samples of the received signal,

compute an average value of said calculated powers for said plurality of samples, and

generate and send an appropriate feedback gain control signal to the automatic gain control component, based on said computed average value.

15. (Currently Amended) A telecommunication device, comprising:

an antenna to receive and transmit RF signal;

a transmitter; and

a receiver including:

an RF downconverter to downconvert the RF signal to an IF signal,

an automatic gain control element to control gain of the receiver by controlling gain of the IF signal,

an IF mixer to downconvert the IF signal to baseband signal,

an analog-to-digital converter (ADC) to convert the analog baseband signal to digital signal, and

an automatic gain control system situated in a feedback path and coupled to an output of the ADC and an input of the automatic gain control element, said automatic gain control system to provide providing a feedback gain control signal to the automatic gain control element based on power levels of said digital signal, said automatic gain control system operating to take multiple samples of said digital signal as received over said

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feedback path and averaging the power levels of said multiple samples to produce said feedback gain control signal.

16. (Original) The device of claim 15, wherein said automatic gain control system of said receiver includes a sampling element to take multiple samples.

17. (Original) The device of claim 16, further comprising an averaging element arranged to produce an output that reduces the impact of samples with power level substantially higher than an average power in generation of said feedback gain control signal.

18. (Original) The device of claim 17, wherein said output of said averaging element is an average value of said multiple samples.

19. (Original) The device of claim 17, wherein said output of said averaging element is a value that is an average of said multiple samples after selectively eliminating samples that are greater than three times the standard deviation of samples in the digital signal.